CHAPTER THREE
DESCRIPTION OF PROPOSED RULE AND REGULATORY OPTIONS

Chapter One provides a summary of the Phase I and Phase II National Pollutant Discharge Elimination System (NPDES) Storm Water Regulations and the Construction General Permit (CGP) for the construction industry. This chapter describes the effluent limitation guidelines and standards program (Section 3.1), the technology alternatives for the proposed effluent limitation guidelines (Section 3.2), and the regulatory options that EPA is proposing for the C&D industry (Section 3.3).

3.1 EFFLUENT LIMITATION GUIDELINES AND STANDARDS

The Federal Water Pollution Control Act, passed in 1972 (CWA, 33 U.S.C. §1251 et seq.), establishes a comprehensive program to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (§101(a)), often referred to as "fishable, swimmable" status. The statute was amended in 1987 to include requirements for a comprehensive program to address storm water discharges. Moreover, EPA is authorized under section 301, 304, 306, and 307 of the CWA to establish effluent limitation guidelines and pretreatment standards for industrial dischargers. EPA is authorized to publish the following standards:

- ***Best Practicable Control Technology Currently Available (BPT)***. Under section 304(b)(1), these rules apply to direct dischargers. BPT limitations are generally based on the average of the best existing performances by plants of various sizes, ages, and unit processes within a point source category or subcategory.

- ***Best Available Technology Economically Achievable (BAT)***. Under section 304(b)(2), these rules apply to direct discharges of toxic and nonconventional[1] pollutants.

[1] Toxic pollutants are listed in Table 1 of U.S.C 1317 Section 307(a)(1) and currently include 64 pollutants and their organic and inorganic compounds. This list includes arsenic, DDT, lead, and mercury. Nonconventional pollutants are any pollutants that are not statutorily listed (not covered by the list of toxic or conventional pollutants) or which are poorly understood by the scientific community.

- ***Best Conventional Pollutant Control Technology (BCT)***. Under section 304(b)(4), these rules apply to direct discharges of conventional pollutants.[2] BCT limitations are generally established using a two-part cost-reasonableness test. BCT replaces BAT for control of conventional pollutants.

- ***Pretreatment Standards for Existing Sources (PSES)***. Under section 307. Analogous to BAT controls, these rules apply to existing indirect dischargers (i.e., dischargers to publicly owned treatment works (POTWs).

- ***New Source Performance Standards (NSPS)***. Under section 306(b), these rules apply to discharges of toxic and nonconventional pollutants and apply to new direct dischargers.

- ***Pretreatment Standards for New Sources (PSNS)***. Under section 307. Analogous to NSPS controls, these rules apply to new source indirect dischargers (i.e., dischargers to publicly owned treatment works (POTWs).

Under the proposed effluent limitation guidelines (ELG), EPA is proposing BAT, BPT, BCT and NSPS guidelines and standards for erosion and sediment control (ESC) during the active construction phase.

3.2 REQUIREMENTS UNDER THE EXISTING CONSTRUCTION GENERAL PERMIT

The CGP, published in 1992 and revised in 1998, directs NPDES permittees to prepare a storm water pollution prevention plan (SWPPP) for certain construction activities. The CGP also calls for installation of temporary sediment basins for construction sites with disturbed area of 10 acres or more. The permit lists a variety of options and goals for other ESCs, but none are required. A description of ESCs, if any, is to be contained in the SWPPP. Options and goals for post-construction storm water best management practices (BMPs) are also contained in the CGP, but none are required. As with ESCs, selected BMPs, if any, are to be described in the SWPPP.

The C&D industry ELG would build upon and complement the CGP by adding inspection and certification (I&C) requirements for active construction ESCs. As described below, under one option

[2] Conventional pollutants include biochemical oxygen demand (BOD), total suspended solids (TSS), fecal coliform, pH, and oil and grease.

EPA would add the I&C requirements for sites of one acre or more in size, while under another option the I&C requirements would apply to sites of 5 acres and above. This second option would also codify in the Code of Federal Regulations (CFR) the requirements found in the CGP. These options are described more fully below.

3.3 SUMMARY OF REGULATORY OPTIONS/TECHNOLOGY ALTERNATIVES

EPA is co-proposing two regulatory alternatives, along with a "no regulation" option, for a total of three regulatory options. EPA has defined the baseline for the proposed rule as full compliance with the current Phase I NPDES storm water regulations and the future Phase II regulations. If any additional costs are incurred by dischargers under the existing storm water regulations the costs will be added to the baseline assumption. Table 3-1 summarizes the regulatory options. Throughout the analysis presented in this report, EPA treats the baseline as "Option 3."

Table 3-1. Summary of Regulatory Options Being Co-Proposed by EPA

Option	Description	Regulatory Mechanism	Applicability
Option 1	Inspection and Certification of Construction Site Erosion and Sediment Controls	Amendment to NPDES storm water permitting regulations	Sites of 1 acre or more
Option 2	"Codification" of the Construction General Permit (CGP) plus Inspection and Certification Requirements	Effluent limitation guidelines	Sites of 5 acres or more
Option 3	No Regulation (Baseline)	N/A	All sites

3.3.1 Option 1

Option 1 would amend 40 CFR Part 122, the section of the CFR covering NPDES permitting, adding a new paragraph (t) section to §122.44 entitled *Inspection and Certification for Construction Site Storm Water Discharges*. These requirement in this section would include:

(1) Site log book. The permittee for a point source discharge under § 122.26(b)(14)(x) or § 122.26(b)(15) shall maintain a record of site activities in a site log book. The site log book shall be maintained as follows:

(i) A copy of the site log book shall be maintained on site and be made available to the permitting authority upon request;

(ii) In the site log book, the permittee shall certify, prior to the commencement of construction activities, that any plans required by the permit meet all Federal, State, Tribal and local erosion and sediment control requirements and are available to the permitting authority;

(iii) The permittee shall have a qualified professional (knowledgeable in the principles and practices of erosion and sediment controls, such as a licensed professional engineer, or other knowledgeable person) conduct an assessment of the site prior to groundbreaking and certify in the log book that the appropriate best management practices (BMPs) described in plans required by the permit have been adequately designed, sized and installed to ensure overall preparedness of the site for initiation of groundbreaking activities. The permittee shall record the date of initial groundbreaking in the site log book. The permittee shall also certify that any inspection, stabilization and BMP maintenance requirements of the permit have been satisfied within 48 hours of actually meeting such requirements; and

(iv) The permittee shall post at the site, in a publicly-accessible location, a summary of the site inspection activities on a monthly basis;

(2) Site Inspections. The permittee or designated agent of the permittee (such as a consultant, subcontractor, or third-party inspection firm) shall conduct regular inspections of the site and record the results of such inspection in the site log book in accordance with paragraph (t)(1) of this section.

(i) After initial groundbreaking, permittees shall conduct site inspections at least every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. These inspections shall be conducted by a qualified professional. During each inspection, the permittee or designated agent shall record the following information:

(A) Indicate on a site map the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14 days;

(B) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(C) Indicate all disturbed site areas that have not undergone active site work during the previous 14 days;

(D) Inspect all sediment control practices and note the approximate degree of sediment accumulation as a percentage of the sediment storage volume (for example 10 percent, 20 percent, 50 percent, etc.). Note all sediment control practices in the site log book that have sediment accumulation of 50 percent or more; and

(E) Inspect all erosion and sediment control BMPs and note compliance with any maintenance requirements such as verifying the integrity of barrier or diversion systems (e.g., earthen berms or silt fencing) and containment systems (e.g., sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document in the site log book any excessive deposition of sediment or ponding water along barrier or diversion systems. Note the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water.

(ii) Prior to filing of the Notice of Termination or the end of permit term, a final site erosion and sediment control inspection shall be conducted by the permittee or designated agent. The inspector shall certify that the site has undergone final stabilization as required by the permit and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed.

Option 1 would also amend §122.44(i)(4) to *exclude* construction activities from requirements for monitoring of storm water discharges.

Option 1 would apply to sites of one acre or more in size.

3.3.2 Option 2

Option 2 would add a new section to the effluent limitation guidelines section of the CFR, i.e., Part 450—Construction and Development Point Source Category. This section would essentially codify

in the CFR the provisions of the CGP (see Section 3.2), and in addition would add the provisions for I&C introduced under Option 1 (Section 3.3.1). Option 2 would amend 40 CFR 122(i)(3) to specify that discharges from construction activity are instead governed by Part 450.

40 CFR Part 450, Subpart A describes applicability and provides definitions. Subpart B would establish the ESC requirements based on application of BPT, BAT, BCT, and NSPS.

Part 450 would apply to construction and development activities subject to an NPDES permit under the definition of "construction activity" at 40 CFR 122.26(b)(14)(x). Section 450.11 establishes some general definitions for the following terms: BMPs, commencement of construction, final stabilization, groundbeaking, new source, operator, perimeter controls, qualified professional, runoff coefficient, and stabilization.

Section 450.21 would establish effluent limitations reflecting **best practicable technology currently available (BPT)**, as follows:[3]

Except as provided in 40 CFR 125.30 through 125.32, any existing point source subject to this subpart must achieve the following effluent limitations representing the application of the best practicable control technology currently available (BPT). Permittees with operational control over construction plans and specification, including the ability to make modifications to those plans and specifications (e.g., developer or owner), must ensure the project specifications that they develop meet the minimum requirements of a SWPPP required by § 450.21(d).

(a) General Erosion and Sediment Controls. Each SWPPP shall include a description of appropriate controls designed to retain sediment on site to the extent practicable. These general erosion and sediment controls shall be included in the SWPPP developed pursuant to paragraph (d) of this section. The SWPPP must include a description of interim and permanent stabilization practices for the site, including a schedule of when the practices will be implemented. Stabilization practices may include:

(1) Establishment of temporary or permanent vegetation;

[3] Parts 450.22, 450.23, and 450.24 would establish identical requirements for BAT, BCT, and NSPS, respectively.

(2) Mulching, geotextiles, or sod stabilization;

(3) Vegetative buffer strips;

(4) Protection of trees and preservation of mature vegetation.

(b) Sediment Controls. The SWPPP must include a description of structural practices to divert flows from exposed soils, store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable.

(1) For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24-hour storm from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. When computing the number of acres draining into a common location it is not necessary to include flows from off-site areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin.

(2) In determining whether a sediment basin is attainable, the operator may consider factors such as site soils, slope, available area on site, etc. In any event, the operator must consider public safety, especially as it relates to children, as a design factor for the sediment basin, and alternative sediment controls shall be used where site limitations would preclude a safe basin design.

(3) For portions of the site that drain to a common location and have a total contributing drainage area of less than 10 disturbed acres, the operator should use smaller sediment basins and/or sediment traps.

(4) Where neither a sediment basin nor equivalent controls are attainable due to site limitations, silt fences, vegetative buffer strips or equivalent sediment controls are required for all down slope boundaries of the construction area and for those side slope boundaries deemed appropriate as dictated by individual site conditions.

(c) Pollution Prevention Measures. The SWPPP shall include the following pollution prevention measures:

(1) Litter, construction chemicals, and construction debris exposed to storm water shall be prevented from becoming a pollutant source in storm water discharges (e.g., screening outfalls, picked up daily); and

(2) A description of construction and waste materials expected to be stored on-site with updates as appropriate, and a description of controls to reduce pollutants

from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.

(d) Storm Water Pollution Prevention Plan. Operators subject to this Part shall compile Storm Water Pollution Prevention Plans (SWPPPs) prior to groundbreaking at any construction site. In areas where EPA is not the permit authority, operators may be required to prepare documents that may serve as the functional equivalent of a SWPPP. Such alternate documents will satisfy the requirements for a SWPPP so long as they contain the necessary elements of a SWPPP. A SWPPP shall incorporate the following information:

(1) A narrative description of the construction activity, including a description of the intended sequence of major activities that disturb soils on the site (major activities include grubbing, excavating, grading, and utilities and infrastructure installation, or any other activity that disturbs soils for major portions of the site);

(2) A general location map (e.g., portion of a city or county map) and a site map. The site map shall include descriptions of the following:

(i) Drainage patterns and approximate slopes anticipated after major grading activities;

(ii) The total area of the site and areas of disturbance;

(iii) Areas that will not be disturbed;

(iv) Locations of major structural and nonstructural controls identified in the SWPPP;

(v) Locations where stabilization practices are expected to occur;

(vi) Locations of off-site material, waste, borrow or equipment storage areas;

(vii) Surface waters (including wetlands); and

(viii) Locations where storm water discharges to a surface water;

(3) A description of available data on soils present at the site;

(4) A description of BMPs to be used to control pollutants in storm water discharges during construction as described elsewhere in this section;

(5) A description of the general timing (or sequence) in relation to the construction schedule when each BMP is to be implemented;

(6) An estimate of the pre-development and post-construction runoff coefficients of the site;

(7) The name(s) of the receiving water(s);

(8) Delineation of SWPPP implementation responsibilities for each site owner or operator;

(9) Any existing data that describe the storm water runoff characteristics at the site.

(e) Updating the SWPPP. The operator shall amend the SWPPP and corresponding erosion and sediment control BMPs whenever:

(1) There is a change in design, construction, or maintenance that has a significant effect on the discharge of pollutants to waters of the United States which has not been addressed in the SWPPP; or

(2) Inspections or investigations by site operators, local, State, Tribal or Federal officials indicate that the SWPPP is proving ineffective in eliminating or significantly minimizing pollutant discharges.

(f) Site Log Book/Certification. The operator shall maintain a record of site activities in a site log book, as part of the SWPPP. The site log book shall be maintained as follows:

(1) A copy of the site log book shall be maintained on site and be made available to the permitting authority upon request;

(2) In the site log book, the operator shall certify, prior to the commencement of construction activities, that the SWPPP prepared in accordance with paragraph (d) of this section meets all Federal, State and local erosion and sediment control requirements and is available to the permitting authority;

(3) The operator shall have a qualified professional conduct an assessment of the site prior to groundbreaking and certify in the log book that the appropriate BMPs and erosion and sediment controls described in the SWPPP and required by paragraphs (a), (b), (c) and (d) of this section have been adequately designed, sized and installed to ensure overall preparedness of the site for initiation of groundbreaking activities. The operator shall record the date of initial groundbreaking in the site log book. The operator shall also certify that the requirements of paragraphs (g), (h) and (i) of this section have been satisfied within 48 hours of actually meeting such requirements;

(4) The operator shall post at the site, in a publicly-accessible location, a summary of the site inspection activities on a monthly basis.

(g) Site Inspections. The operator or designated agent of the operator (such as a consultant, subcontractor, or third-party inspection firm) shall conduct regular inspections of the site

and record the results of such inspection in the site log book in accordance with paragraph (f) of this section.

(1) After initial groundbreaking, operators shall conduct site inspections at least every 14 calendar days and within 24 hours of the end of a storm event of 0.5 inches or greater. These inspections shall be conducted by a qualified professional. During each inspection, the operator or designated agent shall record the following information:

(i) On a site map, indicate the extent of all disturbed site areas and drainage pathways. Indicate site areas that are expected to undergo initial disturbance or significant site work within the next 14-day period;

(ii) Indicate on a site map all areas of the site that have undergone temporary or permanent stabilization;

(iii) Indicate all disturbed site areas that have not undergone active site work during the previous 14-day period;

(iv) Inspect all sediment control practices and note the approximate degree of sediment accumulation as a percentage of the sediment storage volume (for example 10 percent, 20 percent, 50 percent, etc.). Record all sediment control practices in the site log book that have sediment accumulation of 50 percent or more; and

(v) Inspect all erosion and sediment control BMPs and record all maintenance requirements such as verifying the integrity of barrier or diversion systems (earthen berms or silt fencing) and containment systems (sediment basins and sediment traps). Identify any evidence of rill or gully erosion occurring on slopes and any loss of stabilizing vegetation or seeding/mulching. Document in the site log book any excessive deposition of sediment or ponding water along barrier or diversion systems. Record the depth of sediment within containment structures, any erosion near outlet and overflow structures, and verify the ability of rock filters around perforated riser pipes to pass water.

(2) Prior to filing of the Notice of Termination or the end of permit term, a final site erosion and sediment control inspection shall be conducted by the operator or designated agent. The inspector shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (such as silt fencing) not needed for long-term erosion control have been removed.

(h) Stabilization. The operator shall initiate stabilization measures as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. This requirement does not apply in the following instances:

(1) Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceased is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable;

(2) Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within 21 days, temporary stabilization measures need not be initiated on that portion of the site.

(3) In arid areas (areas with an average annual rainfall of 0 to 10 inches), semi-arid areas (areas with an average annual rainfall of 10 to 20 inches), and areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonably arid conditions, the operator shall initiate stabilization measures as soon as practicable.

(i) Maintenance. Sediment shall be removed from sediment traps or sediment ponds when design capacity has been reduced by 50 percent.

Option 2 would apply to sites of five acres or more.

3.3.3 Option 3

Option 3 is the "no regulation" option. Storm water runoff from construction and development activities would continue to be managed in accordance with the requirements of the CGP. There would be no incremental compliance requirements and consequently no incremental compliance costs or benefits.